

## Change log for R-package relaimpo

### **Version 1.2 (January 27<sup>th</sup> 2007)**

#### **Changes from previous versions**

- o Regressors can now be grouped, which
  - o allows to handle large numbers of regressors as long as they are combined into a reasonably small number of groups
  - o will in the future allow to handle factors via grouped dummy variables
- o Improvements to error messages

### **Version 1.1-1 (September 21<sup>st</sup> 2006)**

#### **Changes from previous versions**

Package gave ERROR on R CMD check for R 2.4.0 alpha, presumably because of changed behavior of automatic printing for S4 objects (error because of empty slots). This has been fixed by creating S4 methods for show and print.

### **Version 1.1 (June 29<sup>th</sup> 2006)**

#### **Changes from previous versions**

Bug fix for the formula method for calc.relimp and boot.relimp: formulae with "." on the right-hand side did cause an error message.

### **Version 1.0-1 (June 19<sup>th</sup> 2006)**

#### **Changes from previous versions**

Global version on CRAN only: Correction to the description file, which for version 1.0 erroneously claimed that this were the non-US version of the package.

### **Version 1.0 (June 16<sup>th</sup> 2006)**

#### **Changes from previous versions**

Several improvements have been made:

- o It is now possible to designate some regressors as adjustment regressors that are adjusted out before assessing relative importance of the remaining regressors (option always for functions calc.relimp and boot.relimp).
- o Function calc.relimp has been made generic with methods for formula and linear model objects. The default method has also been enhanced to accept more different types of input.

Overall, the first object handed over to calc.relimp can now be any of the following:

a covariance matrix (former parameter covg),

a data matrix or data frame the first column of which needs to be the response variable (like in function lm),

a response vector (if a regressor matrix  $x$  is also provided),  
a linear model formula,  
or a linear model object (class `lm`).

Note, however, that `relaimpo` does not accept factors as regressors.

- o Function `boot.relimp` has been made generic with methods for formula and linear model objects. The default method has also been enhanced to accept more different types of input. Except for a covariance matrix that is not sufficient for the bootstrapping routine, `boot.relimp` accepts the same objects as `calc.relimp`.
- o Besides a bootstrapping routine for random regressors, a bootstrapping routine for fixed regressors is now also available (option `fixed=TRUE` in `boot.relimp`).
- o If data vectors, matrices or frames include missing values, `relaimpo` uses complete cases only (based on function `complete.cases` from package `stats`) and prints a warning message.

Options regarding `na.action` are in effect only if the formula specification of the model is used.

Previously, a missing value in the data for `boot.relimp` would have caused an error.

(Naturally, a covariance matrix given to `calc.relimp` must not have any missing values.)

- o The plots are annotated in a more useful way (overall title, better axis labels, annotation indicating what options were chosen in the calculations).
- o Annotation of printed output has been enhanced in line with annotation of plots.
- o Two bugs regarding output of `booteval.relimp` have been fixed:
  - o For `rank=TRUE` and `norank=FALSE`: If shares or confidence bounds were very small, the printed numbers were far too large (all calculations were correct, but a formatting issue showed cut-off scientific notation).
  - o For `rank=FALSE` or `norank=TRUE`: the empty line between several metrics showed 0.0000 instead of blanks.

The following changes have been made to settings and defaults (apologies to any pioneering users who may be inconvenienced by one of these)

- o `relaimpo` no longer works for R-versions before 2.2.1  
(calculations do work from 2.0.1, but number printout can be wrong!)
- o The default for option `rela` has been changed from `TRUE` to `FALSE` – sorry for any inconvenience this may cause to pioneering users.
- o The default number of bootstrap resamples has been reduced from `b=1500` to `b=1000`.

### **Version 0.5-1 (April 13<sup>th</sup> 2006)**

This change applies to the non-US version only: PMVD gave an error message, if after leaving out regressors with coefficients estimated as 0 there were less than two remaining regressors. This issue has been fixed.

### **Version 0.5 (February 3<sup>rd</sup> 2006)**

#### **Change from previous versions**

The files `$.relimplm.R` and `$.relimplmbooteval.R` have been renamed to `dollar.relimplm.R` and `dollar.relimplmbooteval.R` respectively in order to eliminate warnings in checks of R development version.

### **Version 0.4 (January 21<sup>st</sup> 2006)**

#### **Change from previous versions**

Bootstrapping and evaluation of bootstrap results now also works for two regressors only. Previously, this did not work due to three bugs:

- o The internal function `nchoosek` produced a “subscript out of bounds” error (on this occasion, reference to the original package `vsu` within the function was also corrected; previously, erroneously referenced `e1071`).
- o The internal function `last.calc` had a bug for two regressors only.
- o The function `booteval.relimp` did not like to receive a numeric value instead of a 1x1 matrix.

### **Version 0.3 (January 12<sup>th</sup> 2006)**

#### **Change from version 0.2**

correction to column labelling of outputs from function `calc.relimp`:

In version 0.2, column labels of calculated metrics were in the order the metrics were requested and did not fit the calculated metrics, which were in the standard order of the metrics (`lmg`, `pmvd`, `last`, `first`, `betasq`, `pratt`).

### **Version 0.2 (December 16<sup>th</sup> 2005)**

#### **Changes from version 0.1**

1. correction to `coerce` method for `relimplm` (`as.relimplm.R`) and its documentation: `coerce` method coerces the full object to list, including the non-numeric components
2. R-code tidied, and comments improved/corrected in many files
3. percentages and ranks metrics output by `relimplm` are named
4. placing of column names for differences output is improved
5. vignette and change log added to documentation

**Original version: Version 0.1 (December 1<sup>st</sup> 2005)**

Ulrike Grömping

TFH Berlin – University of Applied Sciences

<http://www.tfh-berlin.de/~groemp/>